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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 885,336	06 19 2001	Glenn Starkey	26814 92189	5213

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EXAMINER

NGUYEN, THUKHANH T

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 04 28 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,336

Applicant(s)

STARKEY, GLENN

Examiner

Thu Khanh T. Nguyen

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-3 and 7-11 is/are rejected.
- 7) ☐ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1 ☐ Certified copies of the priority documents have been received.
- 2 ☐ Certified copies of the priority documents have been received in Application No. ____.
- 3 ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1722

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 1, line 6, the U.S. Pat. No. 265,042 should have been U.S. Ser. No. 08/265,042. Also the statuses of those patent applications need to be updated.

Appropriate correction is required.

2. The spelling of PTFE should be consistent throughout the whole specification and the claims. The correct spelling is polytetrafluoroethylene.

Claim Objections

3. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The thickness of 0.00004 inch to 0.001 inch is out of the range of 0.00004 to 0.00007 inch and does not further limit the thickness range as claimed in claim 1.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley et al (4,443,172) in view of the Japanese reference (06-151490).

Art Unit: 1722

Riley et al disclose an apparatus for molding cathode electrodes for sodium sulphur cells, comprising an upper mold portion (44) and a lower mold portion (42) forming a cavity (50); an ejector receiving bore (Figs. 2-4, bores around pins 60), a plurality of ejector pins (60) with elongated, steel shank extending into the mold cavity to eject molded article (Fig. 4, 60), wherein the pins having a coating layer of chrome-plating to eliminate sticking of the molded component to the pin (col. 5, lines 33-35). However, Riley fails to disclose the coating layer consisting of nickel alloy and having a thickness of less than 0.00001 inch up to 0.00007 inch.

The Japanese reference ('490) discloses a mold for manufacturing semiconductor device, comprising a plurality of ejector pins (10-1 to 10-4) being coated with a film layer containing cluster diamond, chrome and nickel to improve water resistant and durability (see Title and abstract); wherein the thickness of the coating ranged from 0.000004 inch (0.1 μm) to 0.0012 inch (50 μm).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify Riley by replacing the chrome-plating coating layer with a coating layer consisting of nickel alloy with the thickness of 0.000004 inch to 0.0012 inch as taught by the Japanese reference, because the nickel alloy coating would improve water resistant and durability of the ejector pins; wherein the thickness of 0.00004 inch to 0.0012 inch has proved to work best for ejector pins in the semiconductor molding apparatus.

6. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley et al ('172) in view of the Japanese reference ('490) as applied to claims 1-3 and 10-11 above, and further in view of Reed (4,235,583).

Art Unit: 1722

Riley et al and the Japanese reference disclose a molding apparatus with a plurality of ejector pin having nickel alloy coating, but fail to disclose the metal coating is an alloy including cobalt and nickel.

Reed discloses an extrusion die having a plurality of grid pin (13) having a coating (15) consisting of nickel, chromium, cobalt and cobalt-nickel to produce a uniform and smooth surface (col. 2, lines 61-65).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify Riley by providing a coating layer consisting of nickel or cobalt-nickel as taught by Reed, because cobalt-nickel is another alternative which also provide a uniform and smooth surface for the ejector pins.

In regard to claim 8, it would have been obvious to a skilled artisan to select the right ration for the nickel-cobalt compound depending on the desired hardness, smoothness of the coating layer. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

7. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest an ejector pin or any mold parts having a coating consisting of nickel, phosphorus, and polytetrafluoroethylene.

Art Unit: 1722

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In regard to the thickness of the coating layer, according to the letter from attorney Jeffery A. Sadowski dated March 1, 2001, Amolloy has coated ejector pins having thickness of 0.000060 to 0.00007 inch as standard practice since at least 1982.

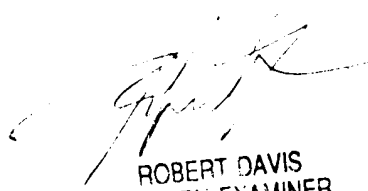
The German reference (197 20 927 A1) discloses a lubricating coating for ejector pins consisting of a matrix (18), chemically deposited nickel (see title and abstract) to improve wear resistant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Khanh T. Nguyen whose telephone number is 703-305-7167. The examiner can normally be reached on Monday- Friday, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

TN
April 21, 2003


ROBERT DAVIS
PRIMARY EXAMINER
GROUP 1300
